



SEQUENCE LISTING

<110> SHINTANI et al.

<120> MEDICINAL USE OF MIP-3a INHIBITOR AND METHOD OF SCREENING BRAIN/NERVE CELL PROTECTIVE AGENT

<130> 20039.0001USWO

<140> 10/547,532

<141> 2005-08-31

<150> PCT/JP2004/002774

<151> 2004-03-04

<150> JP 2003-056885

<151> 2003-03-04

<150> JP 2003-106247

<151> 2003-04-10

<160> 21

<170> PatentIn version 3.1

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Leu	Leu	His	Leu	Cys	Gly	Glu	Ser	Glu	Ala	Ala	Ser	Asn	Phe	Asp	Cys	
-10					-5				-1	1				5		
tgt	ctt	gga	tac	aca	gac	cgt	att	ctt	cat	cct	aaa	ttt	att	gtg	ggc	144
Cys	Leu	Gly	Tyr	Thr	Asp	Arg	Ile	Leu	His	Pro	Lys	Phe	Ile	Val	Gly	
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ttc	aca	cgg	cag	ctg	gcc	aat	gaa	ggc	tgt	gac	atc	aat	gct	atc	atc	192
Phe	Thr	Arg	Gln	Leu	Ala	Asn	Glu	Gly	Cys	Asp	Ile	Asn	Ala	Ile	Ile	
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ttt	cac	aca	aag	aaa	aag	ttg	tct	gtg	tgc	gca	aat	cca	aaa	cag	act	240
Phe	His	Thr	Lys	Lys	Lys	Leu	Ser	Val	Cys	Ala	Asn	Pro	Lys	Gln	Thr	
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tgg	gtg	aaa	tat	att	gtg	cgt	ctc	ctc	agt	aaa	aaa	gtc	aag	aac	atg	288
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 Phe Thr Thr Gln Met Ala Asp Glu Ala Cys Asp Ile Asn Ala Ile Ile
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 ttt cac ctg aag tcg aaa aga tcc gtg tgc gct gac cca aag cag atc 240
 Phe His Leu Lys Ser Lys Arg Ser Val Cys Ala Asp Pro Lys Gln Ile
 40 45 50 55
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Cys Cys Leu Ser Tyr Ile Gln Thr Pro Leu Pro Ser Arg Ala Ile Val
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ggt ttc aca aga cag atg gcc gat gaa gct tgt gac att aat gct atc 192
Gly Phe Thr Arg Gln Met Ala Asp Glu Ala Cys Asp Ile Asn Ala Ile
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atc ttt cac acg aag aaa aga aaa tct gtg tgc gct gat cca aag cag 240
Ile Phe His Thr Lys Lys Arg Lys Ser Val Cys Ala Asp Pro Lys Gln
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aac tgg gtg aaa agg gct gtg aac ctc ctc agc cta aga gtc aag aag 288
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 Asp Tyr Phe Val Ser Val Asn Thr Ser Tyr Tyr Ser Val Asp Ser Glu
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 atg tta ctg tgc tcc ttg cag gag gtc agg cag ttc tcc agg cta ttt 144
 Met Leu Leu Cys Ser Leu Gln Glu Val Arg Gln Phe Ser Arg Leu Phe
 35 40 45
 gta ccg att gcc tac tcc ttg atc tgt gtc ttt ggc ctc ctg ggg aat 192
 Val Pro Ile Ala Tyr Ser Leu Ile Cys Val Phe Gly Leu Leu Gly Asn
 50 55 60
 att ctg gtg gtg atc acc ttt gct ttt tat aag aag gcc agg tct atg 240
 Ile Leu Val Val Ile Thr Phe Ala Phe Tyr Lys Lys Ala Arg Ser Met
 65 70 75 80
 aca gac gtc tat ctc ttg aac atg gcc att gca gac atc ctc ttt gtt 288
 Thr Asp Val Tyr Leu Leu Asn Met Ala Ile Ala Asp Ile Leu Phe Val
 85 90 95
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 Leu Thr Leu Pro Phe Trp Ala Val Ser His Ala Thr Gly Ala Trp Val
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 Phe Ser Asn Ala Thr Cys Lys Leu Leu Lys Gly Ile Tyr Ala Ile Asn
 115 120 125
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 Phe Asn Cys Gly Met Leu Leu Thr Cys Ile Ser Met Asp Arg Tyr
 130 135 140
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 Ile Ala Ile Val Gln Ala Thr Lys Ser Phe Arg Leu Arg Ser Arg Thr
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 165 170 175
 atc atc tcc agc tca act ttt gtc ttc aac caa aaa tac aac acc caa 576
 Ile Ile Ser Ser Ser Thr Phe Val Phe Asn Gln Lys Tyr Asn Thr Gln
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Val	Ala	Val	Trp	Phe	Ile	Ser	Ile	Ile	Ile	Ser	Ser	Pro	Thr	Phe	Ile	
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Phe	Asn	Lys	Lys	Tyr	Glu	Leu	Gln	Asp	Arg	Asp	Val	Cys	Glu	Pro	Arg	
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tac	agg	tct	gtc	tca	gag	ccc	atc	acg	tgg	aag	ctg	ctg	ggg	atg	gga	624
Tyr	Arg	Ser	Val	Ser	Glu	Pro	Ile	Thr	Trp	Lys	Leu	Leu	Gly	Met	Gly	
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ctg	gag	ctg	ttc	ttt	ggg	ttc	ttc	acc	cct	ttg	ctg	ttt	atg	gtg	ttc	672
Leu	Glu	Leu	Phe	Phe	Gly	Phe	Phe	Thr	Pro	Leu	Leu	Phe	Met	Val	Phe	
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Cys	Tyr	Leu	Phe	Ile	Ile	Lys	Thr	Leu	Val	Gln	Ala	Gln	Asn	Ser	Lys	
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Arg	His	Arg	Ala	Ile	Arg	Val	Val	Ile	Ala	Val	Val	Leu	Val	Phe	Leu	
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gct	tgt	cag	atc	cct	cac	aac	atg	gtc	ctc	ctc	gtg	act	gcg	gtc	aac	816
Ala	Cys	Gln	Ile	Pro	His	Asn	Met	Val	Leu	Leu	Val	Thr	Ala	Val	Asn	
			260					265					270			
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Thr	Gly	Lys	Val	Gly	Arg	Ser	Cys	Ser	Thr	Glu	Lys	Val	Leu	Ala	Tyr	
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Thr	Arg	Asn	Val	Ala	Glu	Val	Leu	Ala	Phe	Leu	His	Cys	Cys	Leu	Asn	
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Pro	Val	Leu	Tyr	Ala	Phe	Ile	Gly	Gln	Lys	Phe	Arg	Asn	Tyr	Phe	Met	
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aag	atc	atg	aag	gat	gtg	tgg	tgt	atg	aga	agg	aag	aat	aag	atg	cct	1008
Lys	Ile	Met	Lys	Asp	Val	Trp	Cys	Met	Arg	Arg	Lys	Asn	Lys	Met	Pro	
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ggc	ttc	ctc	tgt	gcc	cgg	gtt	tac	tcg	gaa	agc	tac	atc	tcc	agg	cag	1056
Gly	Phe	Leu	Cys	Ala	Arg	Val	Tyr	Ser	Glu	Ser	Tyr	Ile	Ser	Arg	Gln	
			340					345					350			
acc	agt	gag	acc	gtc	gaa	aat	gat	aat	gca	tcg	tcc	ttt	acc	atg		1101
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 35 40 45
 Cys Val Phe Gly Leu Leu Gly Asn Ile Met Val Val Met Thr Phe Ala
 50 55 60
 Phe Tyr Lys Lys Ala Arg Ser Met Thr Asp Val Tyr Leu Leu Asn Met
 65 70 75 80
 Ala Ile Thr Asp Ile Leu Phe Val Leu Thr Leu Pro Phe Trp Ala Val
 85 90 95
 Thr His Ala Thr Asn Thr Trp Val Phe Ser Asp Ala Leu Cys Lys Leu
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 Met Lys Gly Thr Tyr Ala Val Asn Phe Asn Cys Gly Met Leu Leu Leu

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Ser	Phe	130	Arg	Val	Arg	Ser	135	Arg	Thr	Leu	Thr	His	Ser	140	Lys	Val	Ile	Cys
Val	Ala	145	Val	Trp	Phe	Ile	150	Ser	Ile	Ile	Ile	Ser	Ser	155	Pro	Thr	Phe	Ile
Phe	Asn	165	Lys	Tyr	Glu	Leu	Gln	170	Asp	Arg	Asp	Val	Cys	175	Glu	Pro	Arg	
Tyr	Arg	180	Ser	Val	Ser	Glu	Pro	185	Thr	Trp	Lys	Leu	Leu	190	Gly	Met	Gly	
Leu	Glu	195	Leu	Phe	Phe	Gly	Phe	200	Thr	Pro	Leu	Leu	Phe	205	Met	Val	Phe	
Cys	Tyr	210	Leu	Phe	Ile	Ile	Lys	215	Thr	Leu	Val	Gln	Ala	220	Gln	Asn	Ser	Lys
Arg	His	225	Arg	Ala	Ile	Arg	Val	230	Val	Ile	Ala	Val	Val	235	Leu	Val	Phe	Leu
Ala	Cys	245	Gln	Ile	Pro	His	Asn	250	Met	Val	Leu	Leu	Val	255	Thr	Ala	Val	Asn
Thr	Gly	260	Lys	Val	Gly	Arg	Ser	265	Cys	Ser	Thr	Glu	Lys	270	Val	Leu	Ala	Tyr
Thr	Arg	275	Asn	Val	Ala	Glu	Val	280	Leu	Ala	Phe	Leu	His	285	Cys	Cys	Leu	Asn
Pro	Val	290	Leu	Tyr	Ala	Phe	Ile	295	Gly	Gln	Lys	Phe	Arg	300	Asn	Tyr	Phe	Met
Lys	Ile	305	Met	Lys	Asp	Val	Trp	310	Cys	Met	Arg	Arg	Lys	315	Asn	Lys	Met	Pro
Gly	Phe	325	Leu	Cys	Ala	Arg	Val	330	Tyr	Ser	Glu	Ser	Tyr	335	Ile	Ser	Arg	Gln
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Leu Gly Asn Ile Met Val Val Ile Thr Phe Ala Phe Tyr Lys Lys Ala						
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Arg Ser Met Thr Asp Val Tyr Leu Leu Asn Met Ala Ile Thr Asp Ile						
70 75 80						
ctc ttt gtc ctc acc cta cca ttc tgg gca gtt act cat gcc act gac						642
Leu Phe Val Leu Thr Leu Pro Phe Trp Ala Val Thr His Ala Thr Asp						
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act tgg atc ttt ggc aac acg atg tgt aaa ctg atg aaa ggc acg tat						690
Thr Trp Ile Phe Gly Asn Thr Met Cys Lys Leu Met Lys Gly Thr Tyr						
105 110 115						
gcg gtc aac ttt aac tgt ggg atg ctg ctc ctg gcc tgt atc agc atg						738
Ala Val Asn Phe Asn Cys Gly Met Leu Leu Leu Ala Cys Ile Ser Met						
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Asp Arg Tyr Ile Ala Ile Val Gln Ala Thr Lys Ser Phe Arg Val Arg						
135 140 145						
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Ser Arg Thr Leu Thr His Ser Lys Val Ile Cys Leu Thr Val Trp Phe						
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Val Ser Ile Ile Ile Ser Ser Pro Thr Phe Phe Asn Lys Gln Tyr						
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Lys Leu Gln Gly Arg Asp Val Cys Glu Pro Gln Tyr Lys Leu Val Ser						
185 190 195						
gag ccc atc acg tgg aaa ctg ctg ggc atg gga ctc gag ctg ctc ttt						978
Glu Pro Ile Thr Trp Lys Leu Leu Gly Met Gly Leu Glu Leu Leu Phe						
200 205 210						
ggc ttc ttc atc cct ttg ctg ttt atg gtg ttc tgt tac ctg ttc atc						1026
Gly Phe Phe Ile Pro Leu Leu Phe Met Val Phe Cys Tyr Leu Phe Ile						
215 220 225						
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Ile Lys Thr Leu Val Gln Ala Gln Asn Ser Lys Arg His Arg Ala Ile						
230 235 240						
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Arg Val Val Ile Ala Val Val Leu Val Phe Leu Ala Cys Gln Ile Pro						
245 250 255 260						
cac aac atg gtc ctc ctc gtg act gca gcc aac acg ggc aaa atg ggc						1170
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265 270 275						

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Glu Val Leu Ala Phe Leu His Cys 300 Cys Leu Asn Pro Val Leu Tyr Ala	
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Phe Ile Gly Gln Lys Phe Arg 315 Ser Tyr Phe Met Lys 320 Ile Met Lys Asp	
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Val Trp Cys Met Arg Arg Lys Ser Lys Val Pro 335 Thr Phe Phe Cys Ala 340	
cgg gtt tac tca gaa agc tac atc tcc agg cag acc agt gag act gta	1410
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Val Phe Gly Leu Leu Gly Asn Ile Met Val Val Ile Thr Phe Ala Phe	
50 55 60	
Tyr Lys Lys Ala Arg Ser Met Thr Asp Val Tyr Leu Leu Asn Met Ala	
65 70 75 80	
Ile Thr Asp Ile Leu Phe Val Leu Thr Leu Pro Phe Trp Ala Val Thr	
85 90 95	
His Ala Thr Asp Thr Trp Ile Phe Gly Asn Thr Met Cys Lys Leu Met	
100 105 110	
Lys Gly Thr Tyr Ala Val Asn Phe Asn Cys Gly Met Leu Leu Leu Ala	
115 120 125	
Cys Ile Ser Met Asp Arg Tyr Ile Ala Ile Val Gln Ala Thr Lys Ser	
130 135 140	
Phe Arg Val Arg Ser Arg Thr Leu Thr His Ser Lys Val Ile Cys Leu	
145 150 155 160	
Thr Val Trp Phe Val Ser Ile Ile Ile Ser Ser Pro Thr Phe Phe Phe	
165 170 175	
Asn Lys Gln Tyr Lys Leu Gln Gly Arg Asp Val Cys Glu Pro Gln Tyr	
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Lys Leu Val Ser Glu Pro Ile Thr Trp Lys Leu Leu Gly Met Gly Leu	
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Glu Leu Leu Phe Gly Phe Phe Ile Pro Leu Leu Phe Met Val Phe Cys	
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Tyr Leu Phe Ile Ile Lys Thr Leu Val Gln Ala Gln Asn Ser Lys Arg	
225 230 235 240	
His Arg Ala Ile Arg Val Val Ile Ala Val Val Leu Val Phe Leu Ala	
245 250 255	
Cys Gln Ile Pro His Asn Met Val Leu Leu Val Thr Ala Ala Asn Thr	
260 265 270	
Gly Lys Met Gly Arg Ser Cys Ser Ala Glu Lys Ala Leu Ala Tyr Ala	
275 280 285	
Arg Asn Val Ala Glu Val Leu Ala Phe Leu His Cys Cys Leu Asn Pro	
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cct ttg ctg ttt atg gtg ttc tgt tac ctg ttc atc atc aag acc ttg	845
Pro Leu Leu Phe Met Val Phe Cys Tyr Leu Phe Ile Ile Lys Thr Leu	
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Val Gln Ala Gln Asn Ser Lys Arg His Arg Ala Ile Arg Val Val Ile	
235 240 245	
gct gtg gtt ctc gtg ttc ctg gct tgt cag atc cct cac aac atg gtc	941
Ala Val Val Leu Val Phe Leu Ala Cys Gln Ile Pro His Asn Met Val	
250 255 260	
ctc ctc gtg act gca gcc aac acg ggc aaa atg ggc cgc agc tgc agc	989
Leu Leu Val Thr Ala Ala Asn Thr Gly Lys Met Gly Arg Ser Cys Ser	
265 270 275 280	
gcc gag aaa gcc ctc gcc tac gcc agg aat gtg gct gag gtc ctg gct	1037
Ala Glu Lys Ala Leu Ala Tyr Ala Arg Asn Val Ala Glu Val Leu Ala	
285 290 295	
ttc ctg cac tgc tgt ctc aac ccc gtg ttg tat gcc ttc att gga cag	1085
Phe Leu His Cys Cys Leu Asn Pro Val Leu Tyr Ala Phe Ile Gly Gln	
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Lys Phe Arg Ser Tyr Phe Met Lys Ile Met Lys Asp Val Trp Cys Met	
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Arg Arg Lys Ser Lys Val Pro Thr Phe Phe Cys Ala Arg Val Tyr Ser	
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Glu Ser Tyr Ile Ser Arg Gln Thr Ser Glu Thr Val Glu Asn Asp Asn	
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gca tcg tcc ttt acc atg taa cacgagagca caaagcagca tgccccgaaa	1280
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